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| APPLICATION NO.                 | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------|-------------|----------------------|---------------------|------------------|
| 10/645,331                      | 08/21/2003  | Aydogan Ozcan        | STANF.131CP2        | 7605             |
| 20995                           | 7590        | 07/14/2005           | EXAMINER            |                  |
| KNOBBE MARTENS OLSON & BEAR LLP |             |                      | NGUYEN, SANG H      |                  |
| 2040 MAIN STREET                |             |                      | ART UNIT            |                  |
| FOURTEENTH FLOOR                |             |                      | PAPER NUMBER        |                  |
| IRVINE, CA 92614                |             |                      | 2877                |                  |

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/645,331             | OZCAN ET AL.        |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Sang Nguyen            | 2877                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/05;3&amp;7/04;12/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Species b (claims 1-3) in the reply filed on 06/27/05 is acknowledged.

### ***Response to Amendment***

Applicant's response to amendment and election/restriction on 6/27/05 has been entered. It is noted that the application contains claims 3-27 and claims 1-2 and 28-38 have been canceled by the Amendment filed on 06/27/05.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 6/20/05, 07/02/04, 3/05/04 and 12/04/03 has been entered. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 3-5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-37 of U.S. Patent No. 6,856,393 issued Date Feb. 15, 2005. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims 1-37 of U.S. Patent No. 6,856,393 discloses all of features claimed invention of claims 3-5 of the Present Invention. For example, the features (a surface sample, a surface of supplemental sample to form a composite sample, measuring Fourier transform, and calculating the sample nonlinearity profile) of claim 1 of U.S. Patent No. 6,856,393 read on the features (a surface sample, a surface of supplemental sample to form a composite sample, measuring Fourier transform, and calculating the sample nonlinearity profile) of claim 3 of the Present Invention.

Claims 6-27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-37 of U.S. Patent No. 6,856,393 issued Date Feb. 15, 2005. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims 1-37 of U.S. Patent No. 6,856,393 discloses all of features claimed invention of claims 6-27 of the Present Invention except for teaching magnitudes of the sample nonlinearity profile, the reference nonlinearity profile, the first composite nonlinearity profile, and the second composite nonlinearity profile.

For example, claim 6 of Present Invention discloses "calculating the sample nonlinearity profile using the Fourier transform magnitudes of the sample nonlinearity profile, the reference nonlinearity profile, the first composite nonlinearity profile, and the

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second composite nonlinearity profile" is different from the claim 1 of Patent No. 6,856,393 that "calculating the sample nonlinearity profile using the Fourier transform of the sample nonlinearity profile, the reference nonlinearity profile, the first composite nonlinearity profile, and the second composite nonlinearity profile. Thus, it would have been obvious to one having skill in the art at the time the invention was made to the claims 1-37 of U.S. Patent No. 6,856,393 with magnitudes of the sample nonlinearity profile, the reference nonlinearity profile, the first composite nonlinearity profile, and the second composite nonlinearity profile, since it was known in the art that the purpose of measuring accurately nonlinearity profile of values in the samples. Claims 6-27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-37 of U.S. Patent No. 6,856,393 issued Date Feb. 15, 2005.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al (U.S. Patent No. 5,220,451 submitted by Applicant ) in view of Amnon Yariv et al (Compensation for Channel Dispersion by Nonlinear Optical Phase Conjugation, Pages 52-54, Received 10/2/1978, submitted by Applicant).**

**Regarding claims 3-5;** Gotoh et al discloses a method of measuring a second order optical nonlinearity profile of a sample, comprising:

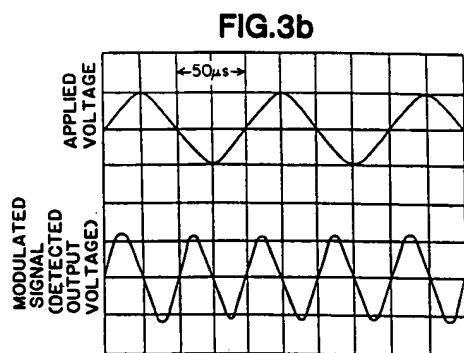
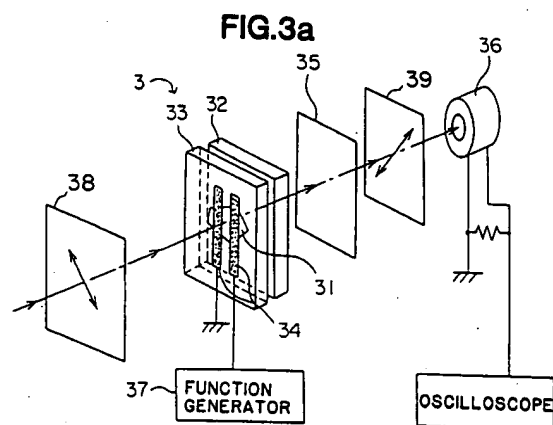
- providing the sample considered to be a thin film single crystal (31 of figure 3a) was adhered to a glass plate (32 of figure 3a) having the optical nonlinearity profile (col.3 liners 1-35 and col.10 lines 5-16 and col.8 lines 7-20);
- placing a surface of the sample (32 of figure 3a) in proximity to a surface of a supplemental sample considered to be a second glass plate (33 of figure 3a), wherein the sample glass plate (32 of figure 3a) and the supplemental sample glass plate (33 of figure 3a) formed a composite sample considered to be an electro-optic device (3 of figure 3a) having a composite nonlinearity profile; and
- measuring the optical nonlinearity profile of the electro-optic device by a photodetector with Maker fringe method (36 of figure 3a and col.2 lines 53 to col.3 line 35 and col.10 lines 10-55) and calculating the sample nonlinearity profile of electro-optic device (3 of 3a) by an oscilloscope (figures 3a-3b) relationship between the signal and sinusoidal voltage (col.11 lines 14-35). See figures 1-8.

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5,220,451



Gotoh et al discloses all of features of claimed invention except for measuring a Fourier transform magnitude of the composite nonlinearity profile and calculating the sample nonlinearity profile using the Fourier transform magnitude of the composite nonlinearity profile. However, Amnon Yariv et al teaches that it is known in the art to provide nonlinear optical phase conjugation device for measuring a Fourier transform magnitude of the composite nonlinearity profile and calculating the sample nonlinearity

profile using the Fourier transform magnitude of the composite nonlinearity profile (pages 52-54).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of measuring a second order optical nonlinearity profile of a sample of Gotoh et al with measuring a Fourier transform magnitude of the composite nonlinearity profile and calculating the sample nonlinearity profile using the Fourier transform magnitude of the composite nonlinearity profile as taught by Amnon Yariv et al for the purpose of improving and correcting to achieve pulse re-narrowing signal with input signal of the specific nonlinear mixing.

**Regarding claim 5;** Gotoh et al discloses the composite nonlinearity profile (3 of figure 3a) is symmetric about the origin. See figures 6-8.

**Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh et al in view of Amnon Yariv et al as applied to claim 3 above, and further in view of Berkovic et al (U.S. Patent No. 5,434,699 submitted by applicant).**

**Regarding claim 4;** Gotoh et al in view of Amnon Yariv discloses the claimed invention except for the sample nonlinearity is non-symmetric. However, Berkovic et al teaches of a method and system for producing second order nonlinear optical effects using in-plane poled polymer films comprises the sample optical nonlinearity is non-symmetric (col.7 line 65 to col.8 line 11 and col.15 lines 48-52). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of measuring a nonlinearity profile of a sample of Gotoh et al with the sample optical nonlinearity is non-symmetric as taught by Berkovic et al for the purpose



of improving and enabling highest second order harmonic generation and electro-optic modulation with the medium.

***Allowable Subject Matter***

**Claims 6-27 would be allowable if Applicant files a Terminal Disclaimer or amended to overcome the nonstatutory double patenting rejection above, set forth in this Office action.**

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dandliker et al (5317147) discloses method and apparatus for absolute measurement of force by using polarizer; or Goodman et al (4674824) discloses system for enhancement of optical features.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sang Nguyen/SN

July 8, 2005



Hoa Q. Pham  
Primary Examiner